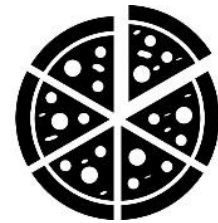# 3. Cloud Service Models

What is a Service?

Something that helps you to do something

Service Models - Cloud Offering – An Example – Pizza as a Service
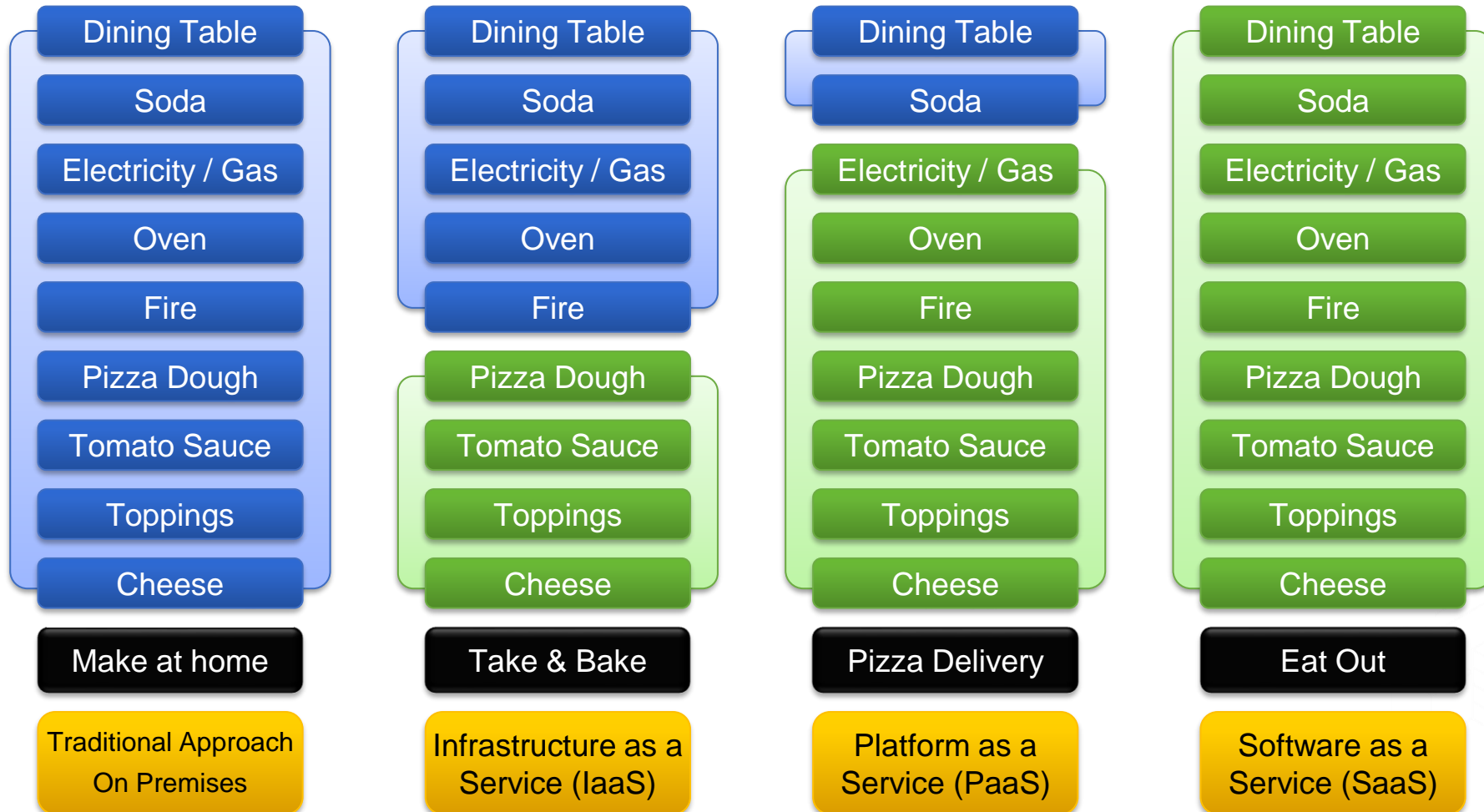

Make at home

Take & Bake

Pizza Delivery

Eat Out

Service Models - Cloud Offering – An Example – Pizza as a Service

Service Models - Cloud Offering – IaaS vs PaaS vs SaaS

You Manage

Vendor Manage

Administrators

Developers

End Users

Traditional Approach **On Premises**	Infrastructure as a Service **IaaS**	Platform as a Service **PaaS**	Software as a Service **SaaS**
Applications	Application	Applications	Application
Data	Data	Data	Data
Runtime	Runtime	Runtime	Runtime
Middleware	Middleware	Middleware	Middleware
OS	OS	OS	OS
Virtualization	Virtualization	Virtualization	Virtualization
Servers	Servers	Servers	Servers
Storage	Storage	Storage	Storage
Networking	Networking	Networking	Networking
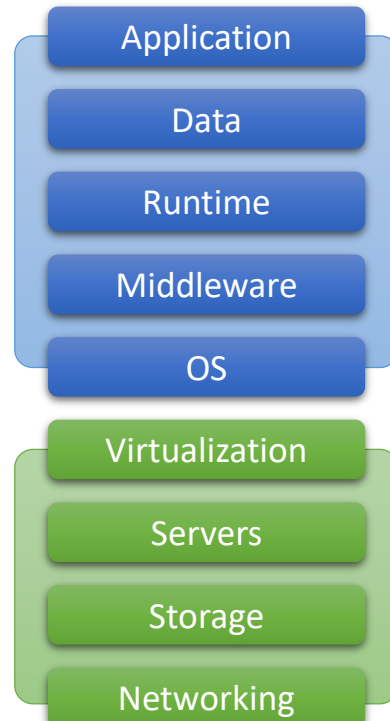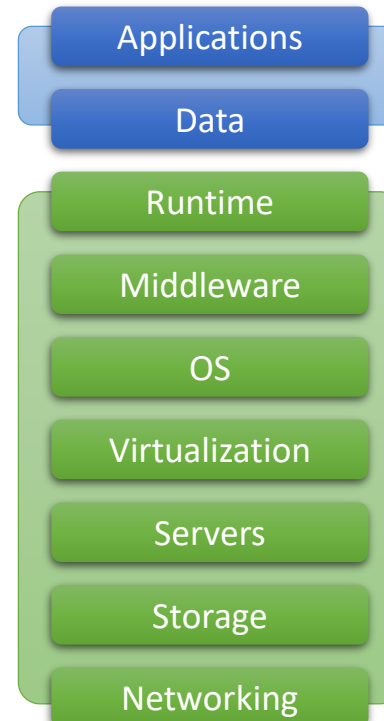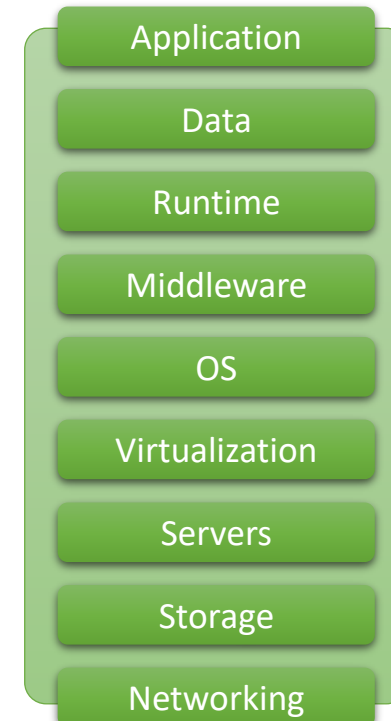
Accessing AWS Services

What is an AWS account?

- An AWS account is a container for your AWS resources.
- You create and manage your AWS resources in an AWS account.

1 Email Address

2 Credit Card

3 Mobile Phone SMS

AWS Account 123456789012

Root User
(Your Email)

Identity and Access Management
- User
- User Group
- Policies
- Roles

AWS Resources

AWS Free Tier - https://aws.amazon.com/free

AWS Free Tier

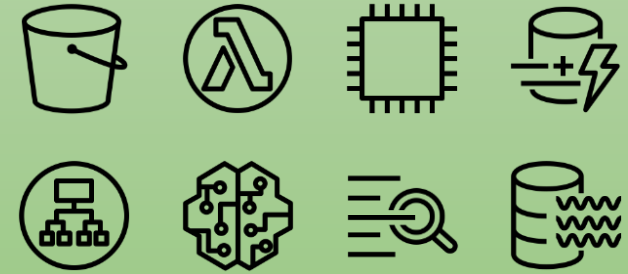Gain free, hands-on experience with the AWS platform, products, and services

Create a Free Account

Types of offers

Explore more than 100 products and start building on AWS using the Free Tier. Three different types of free offers are available depending on the product used. See below for details on each product.

Always free

These free tier offers do not expire and are available to all AWS customers

12 months free

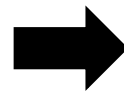Enjoy these offers for 12-months following your initial sign-up date to AWS

Trials

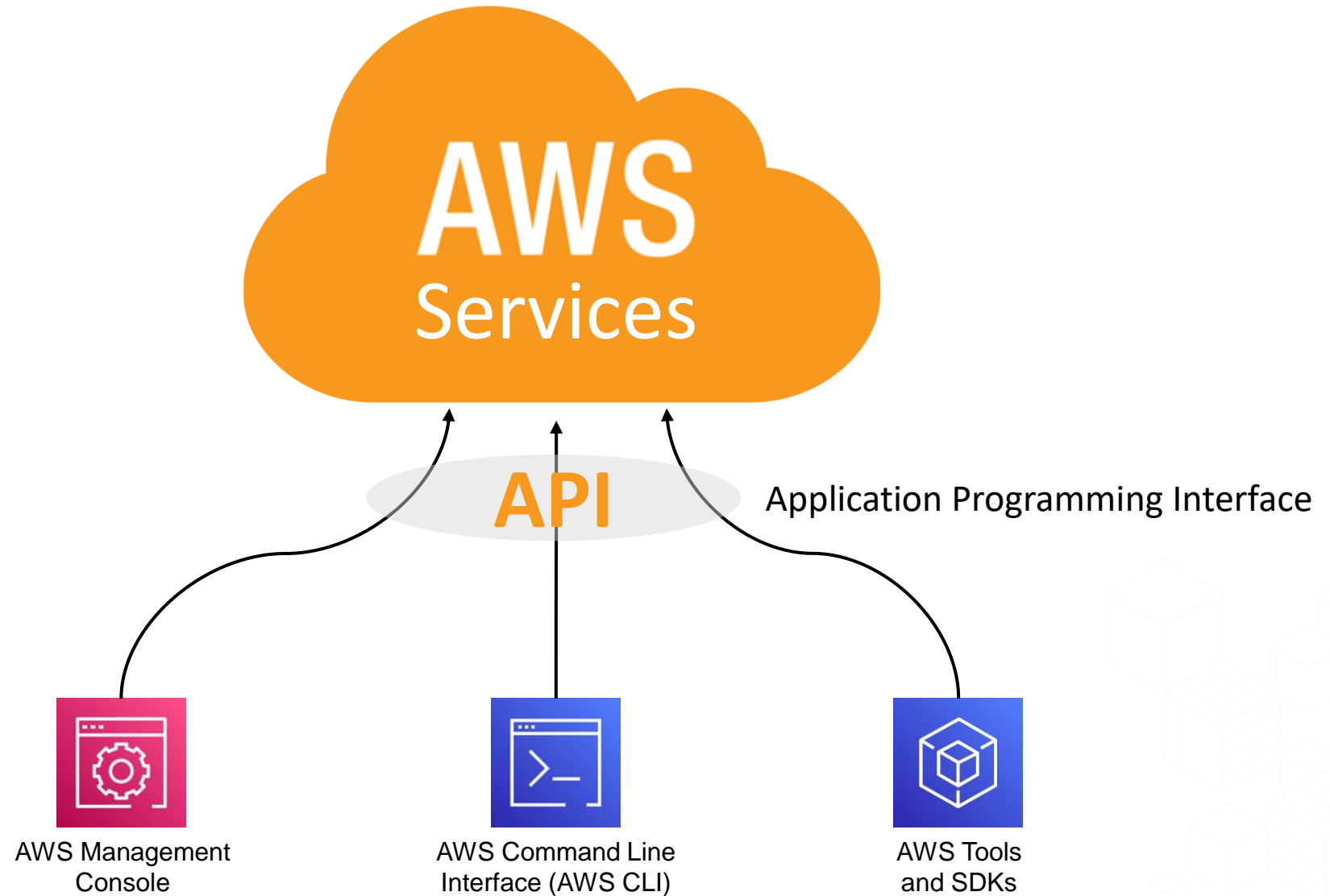Short-term free trial offers start from the date you activate a particular service

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COMPUTE	STORAGE	DATABASE
Free Tier — 12 MONTHS FREE	Free Tier — 12 MONTHS FREE	Free Tier — 12 MONTHS FREE
Amazon EC2	**Amazon S3**	**Amazon RDS**
750 Hours	**5 GB**	**750** Hours
per month	of standard storage	per month of db.t2.micro database usage (applicable DB engines)
Resizable compute capacity in the Cloud.	Secure, durable, and scalable object storage infrastructure.	Managed Relational Database Service for MySQL, PostgreSQL, MariaDB, Oracle
750 hours per month of Linux	5 GB of Standard Storage	

DATABASE	MACHINE LEARNING — NEW	COMPUTE
Free Tier — ALWAYS FREE	Free Tier — FREE TRIAL	Free Tier — ALWAYS FREE
Amazon DynamoDB	**Amazon SageMaker**	**AWS Lambda**
25 GB	**2** Months	**1** Million
of storage	free trial	free requests per month
Fast and flexible NoSQL database with seamless scalability.	Machine learning for every data scientist and developer.	Compute service that runs your code in response to events and automatically manages the compute
	250 hours per month of	

Setup

AWS Budgets

Accessing AWS Services

AWS Services

API — Application Programming Interface

AWS Management Console

AWS Command Line Interface (AWS CLI)

AWS Tools and SDKs

AWS Management Console

What?
- The AWS Management Console provides a unified interface for accessing and interacting with a wide range of AWS services.
- It comprises and refers to a broad collection of service consoles for managing AWS resource.

Why?
- The console provides intuitive way of discovering services, keeps track of your recently visited services and your favorites.
- It provides an assortment of simplified and automated workflows and wizards that make it easier to test and build with AWS services.

When?
- You need to access and manage the AWS Cloud in one web interface.
- You want to explore any AWS service with your choice of browsers. The Console supports the three latest versions of Google Chrome, Mozilla Firefox, Microsoft Edge, and Apple Safari as well as Microsoft Internet Explorer 11.

Where?
- You can access AWS Management Console from any supported browser.
- The AWS Management Console has been designed to work on tablets as well as other kinds of devices
- It is also available as an app for Android and iOS.

Who?
- The AWS Management Console gives you secure login using your AWS or IAM account credentials.
- If you've enabled AWS Multi-Factor Authentication, you will be prompted for your device's authentication code.

How?
- When you first sign in, you see the console home page. The home page provides access to each service console and offers a single place to access the information you need to perform your AWS related tasks.
- You can also customize your home page experience by adding widgets such as service health, cost and usage.

How much?
- There is no additional charge for using AWS Management Console.

AWS CLI

What?
- The AWS Command Line Interface (AWS CLI) is a unified tool to manage your AWS services.
- The AWS CLI version 2 is the most recent major version of the AWS CLI and supports all of the latest features.

Why?
- The AWS CLI provides direct access to the public APIs of AWS services.
- It supports Auto-prompt, Aliases and has a UI wizard for some commands that guides you through managing your AWS resources.

When?
- You want a tool to control multiple AWS services from the command line and automate them through scripts.
- You want to explore service's capabilities with the AWS CLI, and develop shell scripts to manage your resources.

Where?
- The AWS CLI comes pre-installed on Amazon Linux AMI. It can be installed on Windows, MacOS and Linux platform.
- AWS CLI version 2 is also available as a Docker image, hosted on DockerHub. This enables you to use the AWS CLI version 2 in a container-based environment without having to manage the installation yourself.

Who?
- To increase the security of your AWS account, we recommend that you do not use your root account credentials.
- You should create an IAM user to provide access credentials to the tasks you'll be running in AWS.

How?
- To access AWS services with the AWS CLI, you need an AWS account, IAM credentials, and an IAM access key pair. When running AWS CLI commands, the AWS CLI needs to have access to those AWS credentials.
- The AWS CLI stores this information in a *profile* (a collection of settings) named *default* in the credentials file.

How much?
- There are no charges for installing and using AWS CLI.

AWS SDK

What?
- With AWS tools and SDKs (Software Development Kits), you can interact with AWS service APIs. You can use it for developing and managing applications on AWS. This includes various Command Line Tools, SDKs for different popular programming languages, SDKs for IoT devices, and SDKs for mobile devices.

Why?
- SDKs provide language-specific APIs for AWS services. They take care of some of the heavy lifting necessary in successfully making API calls, including authentication, retry behavior, and more.
- Using CLI tools, you can control your services from the command line and automate service management with scripts.

When?
- You want to easily develop applications on AWS in the programming language of your choice.
- You want to write, run, debug, and deploy applications on AWS using language-specific Integrated Development Environments (IDEs).

Where?
- AWS SDK releases are published to package managers (e.g. Maven, NuGet, PyPI), and are available as source code on GitHub. Most of the tools can be downloaded from AWS website and installed on supported platforms.
- Some tools are pre-installed in AWS Cloud 9 IDE.

Who?
- You must configure the SDK or tool with the information that it needs to perform the requested operation. This information includes credentials and other configuration details. Most of the AWS SDKs and tools support common settings from a shared AWS config and credentials files and/or environment variables of your operating system.

How?
- To programmatically access AWS services, SDKs use a client class/object for each AWS service. For example, if your application needs to access Amazon EC2, your application creates an Amazon EC2 client object to interface with that service. You then use the service client to make requests to that AWS service.

How much?
- There is no additional charge for using AWS tools and SDKs.

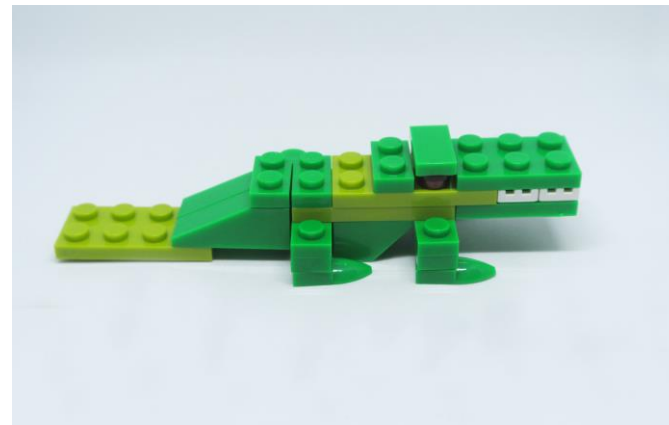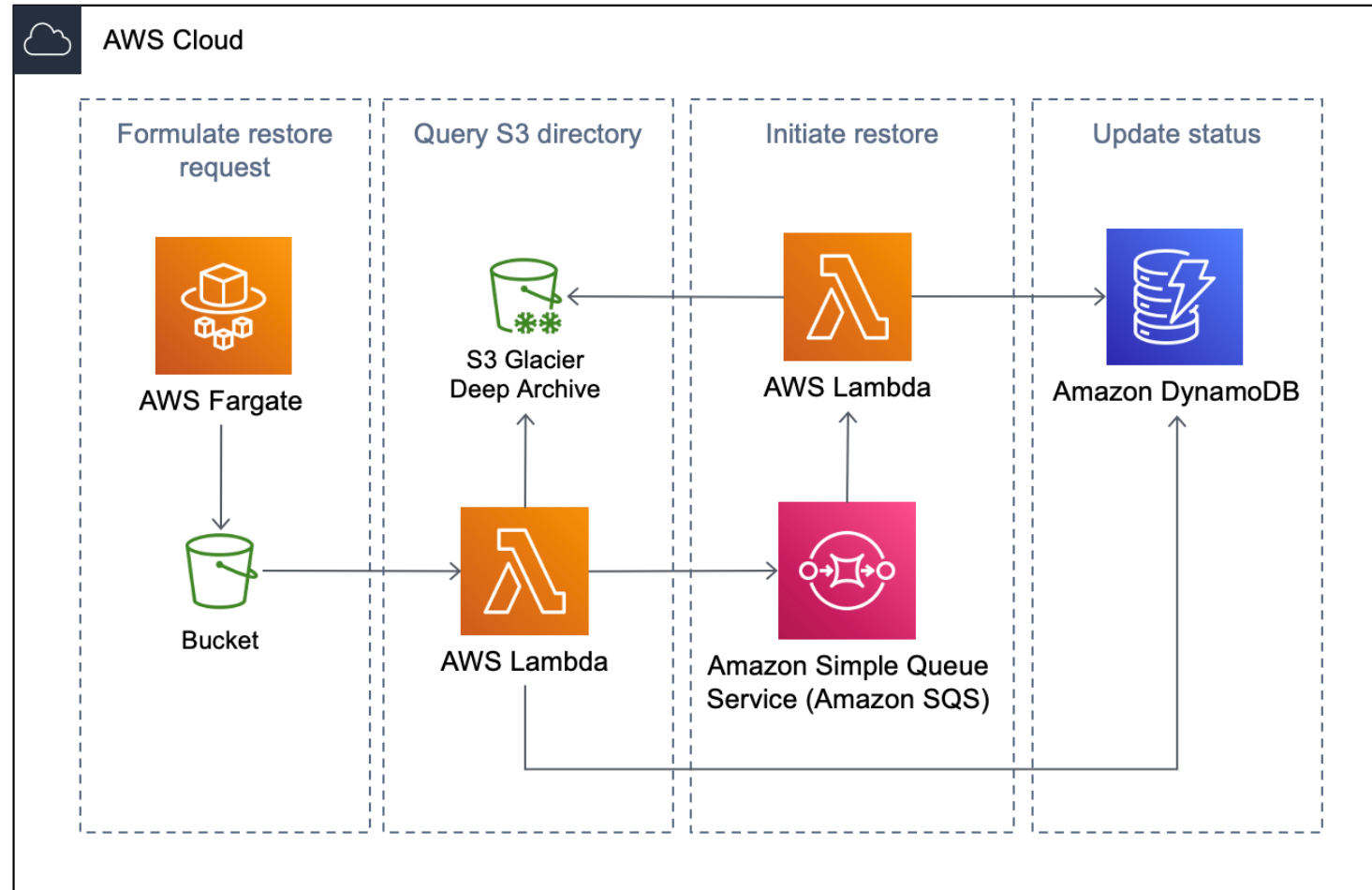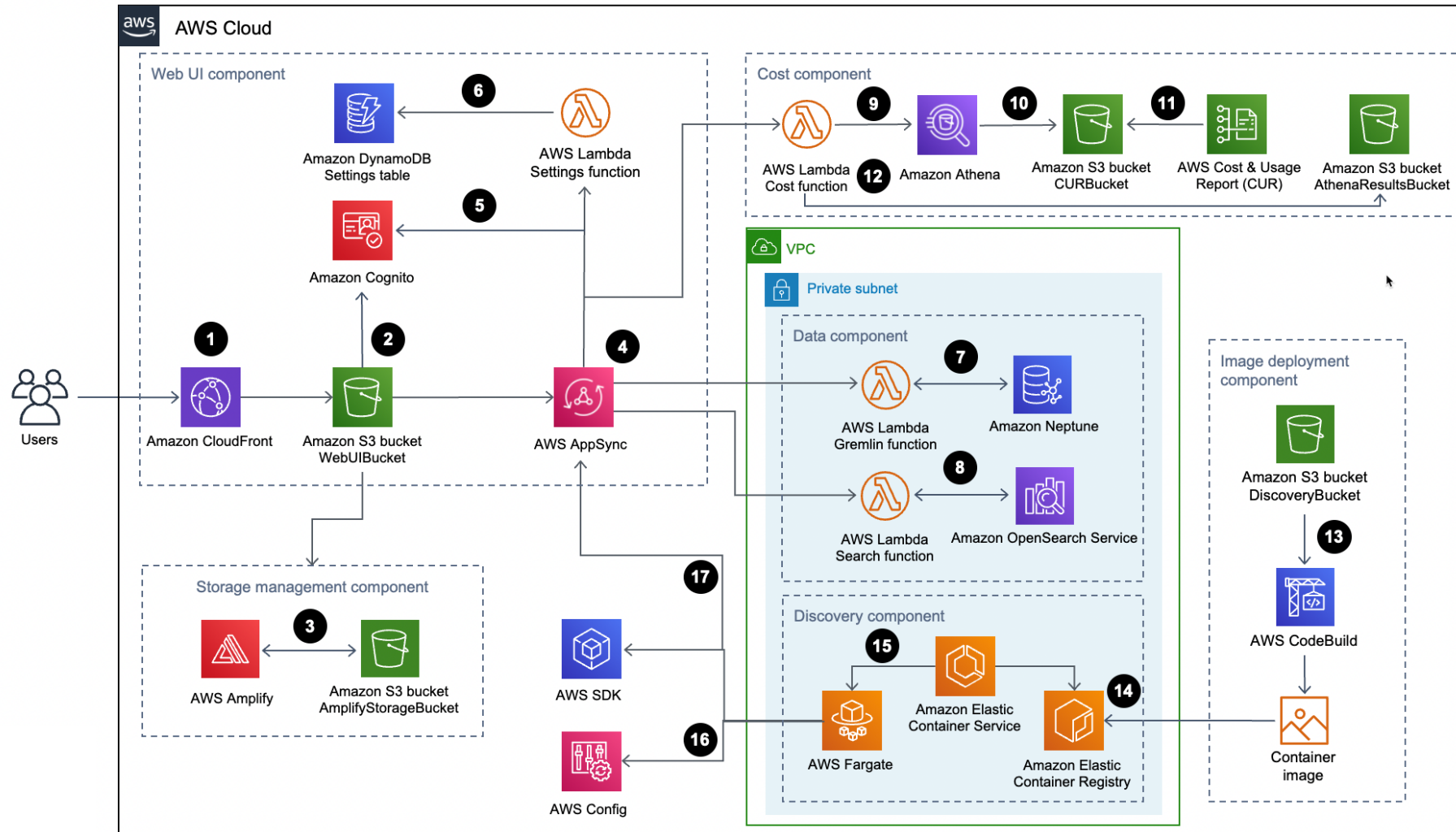# AWS Services are building blocks for your application

Image Source: https://aws.amazon.com/

AWS Reference architecture

- Genomics workflows on AWS architecture

AWS Reference architecture

- Workload Discovery on AWS architecture

Image Source: https://aws.amazon.com/

Feedback

Suggestion

Criticism

https://www.linkedin.com/in/ash-tech/